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09/992,387	11/16/2001	Anthony L. Coyle	TI-31794	7595

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EXAMINER

LEWIS, MONICA

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/992,387
Filing Date: November 16, 2001
Appellant(s): COYLE ET AL.

Yingsheng Tung
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/27/06 appealing from the Office action
mailed 4/20/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by

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reference characters. The brief is deficient because there is a typographical error. Applicant discloses that 29 is an independent claim. However, claim 28 is the independent claim.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5535101	Miles et al.	07-1996
5953592	Taniguchi et al.	09-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25-31 are rejected under 35 U.S.C. 103(a) as obvious over Miles (U.S. Patent No. 5,535,101) in view of Taniguchi et al. (U.S. Patent No. 5,953,592).

In regards to claim 25, Miles et al. ("Miles") discloses the following:

a) an integrated circuit chip (10) having a plurality of contact pads (14) (For Example: See Figure 2);

b) a single-layered insulating interposer (16) film having a top surface and a bottom surface (For Example: See Figure 2);

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c) an electrically conductive pattern (20) formed of a conductive film (20) disposed on the top surface of the insulating film (For Example: See Figure 2);

d) vias (22) extending through the interposer filled with conductive material, contacting the conductive pattern and forming exit ports on the bottom surface (For Example: See Figure 2); and

e) electrical coupling members (26) disposed between the contact pads and conductive lines, connecting the chip to the interposer (For Example: See Figure 2).

In regards to claim 25, Miles fails to disclose the following:

a) the bottom surface immediately adjacent the exit ports free of a conductive pattern and contact pad.

However, Taniguchi et al. ("Taniguchi") discloses that the bottom surface immediately adjacent the exit ports is free of a conductive pattern and contact pad (For Example: See Figure 9). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Miles to include that the bottom surface immediately adjacent the exit ports is free of a conductive pattern and contact pad as disclosed in Taniguchi because it aids in protecting the device from bulging (For Example: See Column 2 Lines 15-20).

Additionally, since Miles and Taniguchi are both from the same field of endeavor, the purpose disclosed by Taniguchi would have been recognized in the pertinent art of Miles.

Finally, the following limitation makes it a product by process claim: a) "thermo-compressed." The MPEP § 2113, states, "Even though product -by[-] process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is

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unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A "*product by process*" claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a "*product by, all of*" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "*product by process*" claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

In regards to claim 26, Miles discloses the following:

- a) solder balls (27) attached to the exit ports (For Example: See Figure 2).

In regards to claim 27, Miles discloses the following:

- a) encapsulating material (30) the integrated circuit chip (For Example: See Figure 2).

In regards to claim 28, Miles discloses the following:

- a) a single-layered insulating interposer (16) film having a top surface and a bottom surface (For Example: See Figure 2);
- b) an electrically conductive pattern formed of a conductive film (20) disposed on the top surface of the insulating film (For Example: See Figure 2); and
- c) vias (22) extending through the interposer filled with conductive material, contacting the conductive pattern and forming exit ports on the bottom surface (For Example: See Figure 2).

In regards to claim 28, Miles fails to disclose the following:

a) the bottom surface immediately adjacent the exit ports free of a conductive pattern and contact pad.

However, Taniguchi discloses that the bottom surface immediately adjacent the exit ports is free of a conductive pattern and contact pad (For Example: See Figure 9). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Miles to include that the bottom surface immediately adjacent the exit ports is free of a conductive pattern and contact pad as disclosed in Taniguchi because it aids in protecting the device from bulging (For Example: See Column 2 Lines 15-20).

Additionally, since Miles and Taniguchi are both from the same field of endeavor, the purpose disclosed by Taniguchi would have been recognized in the pertinent art of Miles.

In regards to claim 29, Miles discloses the following:

a) solder balls (27) attached to the exit ports (For Example: See Figure 2).

In regards to claim 30, Miles discloses the following:

a) the conductive pattern includes attachment sites corresponding to contact pads on the integrated circuit chip (For Example: See Figure 1, Figure 2, Column 3 Lines 35-46 and Column 4 Lines 7-12).

In regards to claim 31, Miles discloses the following:

a) an integrated chip (10) attached to the substrate (For Example: See Figure 2).

(10) Response to Argument

APPELLANT'S ARGUMENTS:

1) The Appellant argues that "a close reading of the Taniguchi reference reveals the nature of the bulging device problem and the proposed solution to this problem; and why it is totally irrelevant to the device...there is no mentioning of a TAB tape, a sealing

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resin, or a die bonding material. Therefore, the solution proposed in the Taniguchi reference does not apply to the device.”

2) The Appellant argues that the “motivation to combine as suggested in the Office Action is misplaced because the combination would be to solve a non-problem in the device.”

EXAMINER’S RESPONSE

1) The claims do not disclose TAB tape, a sealing resin or a die bonding material. Therefore, Applicant is arguing limitations that are not disclosed in the claims.

2) There is nothing disclosed in the MPEP that states that motivation to combine has to solve the same problem as Applicant. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Miles to include that the bottom surface immediately adjacent the exit ports is free of a conductive pattern and contact pad as disclosed in Taniguchi because it aids in protecting the device from bulging (For Example: See Column 2 Lines 15-20).

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(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

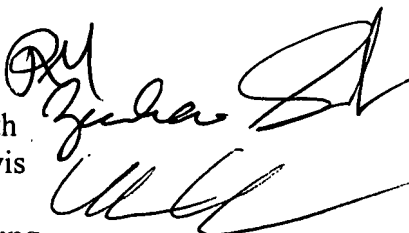
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Monica Lewis

Conferees:

Ricky Mack
Zandra Smith
Monica Lewis

Three handwritten signatures are present. The first signature is for Ricky Mack, the second is for Zandra Smith, and the third is for Monica Lewis. They are written in black ink and are somewhat stylized.

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Zandra V. Smith
Supervisory Patent Examiner